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PATENTS, TRADEMARKS, COPYRIGHTS

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BARRY R. LIPSITZ
DOUGLAS M. McALLISTER

In re Application of: Keeney, et al.
Application No.:   09/688,475
Filed: October 16, 2000
For: **SPOOLING SERVER APPARATUS AND METHODS FOR RECEIVING, STORING AND FORWARDING A PRINT JOB OVER A NETWORK**

Commissioner for Patents
Washington, D.C. 20231

Art Unit: 2624
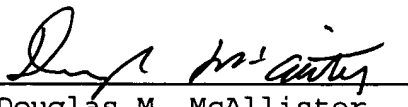Examiner: D. Tran

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Sir:

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[**X**]   A Response in the above-identified application (14 pages plus 2 page attachment)

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Very truly yours,

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Attorney Docket No.:   **MGI-177**

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Keeney, et al.   ) Examiner: D. Tran
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>
> By: _Carol Prentice_
>   Carol Prentice

RESPONSE

Dear Sir:

This Response is responsive to the Office Action mailed on September 4, 2002.

Summary

As a preliminary matter, Applicants note that the Examiner did not forward an initialed PTO-1449 form relating to the Applicants' Second Supplemental Information Disclosure Statement dated August 14, 2002. For the Examiner's convenience, a copy of Applicants' PTO-1449 form, and the post card evidencing receipt of the Information Disclosure Statement by the Patent Office on August 21, 2002, are enclosed. Applicants respectfully request that the Examiner consider and initial the references listed on the enclosed PTO-1449 form, and forward a copy of the initialed PTO-1449 form to Applicants' undersigned attorney.

The Examiner has objected to the drawings as failing to show the steps of the claimed method. Applicants respectfully submit that the drawings show each step of Applicants' method claim 1,

as described in detail below.

Claims 1-90 stand rejected pursuant to 35 U.S.C. § 112 as being indefinite. Applicants respectfully submit that the claims are not indefinite for the reasons set forth in detail below.

Claims 1-4, 6, 12-34, 39-49, 51, 57-79, and 84-90 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Savitzky (US 6,012,083).

Claims 5, 35-38, 50 and 80-83 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over the combination of Savitzky and Newton (US 6,334,142).

Claims 7-11 and 52-56 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over the combination of Savitzky and Pearson (US 6,023,684).

Applicants respectfully traverse the foregoing rejections in view of the following comments.

Discussion of Examiner's Rejection of the Drawings

The Examiner has objected to the drawings as failing to show the steps of the method. The Examiner has required that at least each step of method claim 1 must be shown in the drawings.

Applicants' respectfully submit that the drawings show each step of Applicants' method claim 1, which sets forth a method of receiving, storing, and forwarding a print job over a network, comprised of the following steps:

1. forwarding said print job to a spooling server;

2. receiving said print job at said spooling server;

3. storing said print job at said spooling server;

4. receiving a polling request for said print job at said spooling server from a printer polling device; and

5. forwarding said requested print job from the spooling server to the printer polling device.

Each of these steps is described in connection with Figure 1

on pages 17 and 18 of Applicants' specification. In particular, the steps of "forwarding said print job to a spooling server" and of "receiving said print job at said spooling server" are shown in the Figures. For example, Figure 1 shows that a print job source 10 is in communication with the spooling server 50 over the local area network 20 and the global network 110. The specification describes the origination of a print job at a print job source 10 and the forwarding of the print job from the print job source 10 to the spooling server 50 and receipt of the print job by the spooling server 50 (See, e.g., Applicants' specification at page 17, line 17 through page 18, line 1; page 19, lines 4-5 and 18-26). In addition, Figure 2 shows a print job 11 at print job source 10 which is encrypted and forwarded to and received by spooling server 50. Further, Figure 9 shows Print Jobs as being sent from print job source 10 over network 110 and received by the spooling server 50. Receipt of the print job is also shown in Figure 9 by print job receiver 58 of receiver 51 at the spooling server 50. Figure 11 also shows transmitter 203 used for transmitting a print job 11 to the spooling server 50 over the network 110.

Similarly, the step of "storing said print job at said spooling server" is shown in the Figures. For example, Figure 1 shows spooling queue 52 which is used to store print jobs received by the spooling server 50 (see, e.g., Applicants' specification, page 21, lines 3-4). See also, Figure 4 which shows print jobs stored in the queue 52 at spooling server 50. Similarly, Figure 9 shows print jobs stored at print job storage 52 at the spooling server 50 according to PIN number.

The step of "receiving a polling request for said print job at said spooling server from a printer polling device" is also shown in the Figures. For example, Figure 1 shows a printer polling device 100 which generates a polling request which is forwarded over networks 80 and 110 and received by the spooling

server as described in the specification at page 17, lines 9-12;
page 19, line 26 through page 20, line 3. Further, Figure 8 shows
a polling transmitter 105 which forwards polling requests to the
spooling server 50 over network 110. Figure 9 shows the printer
polling device 100 transmitting a polling request to the spooling
server 50 over the network 110 and receipt of the polling request
at polling receiver 59 of receiver 51 at the spooling server 50.
Figure 10 also shows the printer polling device 100 transmitting
a polling request to the spooling server 50 over the network 110.

The step of "forwarding said requested print job from the
spooling server to the printer polling device" is also shown in
the Figures. For example, Figure 1 shows the spooling queue 52 of
spooling server 50 is in communication with the printer polling
device 100 over networks 110 and 80 for delivering the print job
from the queue 52 to the printer polling device 100 (see, e.g.,
Applicants' specification, page 18, lines 4-8). Figure 8 shows a
print job receiver at polling device 100 for receiving print jobs
forwarded from spooling server 50 via network 110. Figure 9 shows
transmitter 57 at spooling server 50 forwarding a requested print
job to the printer polling device 100. Similarly, Figures 9 and
10 show a requested print job 11 being forwarded from the
spooling server 50 to the printer polling device 100.

Therefore, Applicants respectfully submit that each step of
Applicants' method claim 1 is fully supported by the drawings as
filed. Further, each step of Applicants' method claim 1 is
described in the specification in connection with the Figures.
Withdrawal of the objection to the drawings is respectfully
requested.

Discussion of Examiner's Rejections Under 35 U.S.C. § 112

The Examiner has rejected claims 1-90 pursuant to 35 U.S.C.
§ 112 as being indefinite for failing to particularly point out

and distinctly claim the subject matter which Applicants regard
as the invention. Applicants respectfully submit that they have
adequately claimed the subject matter of the invention. The main
focus of Applicants' invention is the storing of a print job on a
spooling server, where it is kept until a <u>polling request</u> is
received from a printer polling device. This is vastly different
than standard network "push" printing technology known in the
art, where a print job is sent to a known destination printer and
the printer is a passive device which accepts all print jobs sent
to it which are properly configured. Applicants respectfully
submit that their claims sufficiently set forth the subject
matter that they consider inventive.

In particular, the Examiner enumerates several reasons why
the claimed language "storing said print job at said spooling
server" and "receiving a polling request for said print job at
said spooling server from a printer polling device" renders the
claims indefinite (See, Office Action, pages 2-3).

First, the Examiner indicates that the cited claim language
is indefinite since "the print job does not specify its command
parameters to instruct the spooling server how only to store the
print job." Applicants submit that in the claimed invention, all
print jobs sent to the server are stored. This is commonly the
function of a print "spooler" and would be understood by one
skilled in the art to be the function of a "spooling server".
There are various ways of implementing storage on a spooler which
are known in the art of printing. One skilled in the art would
readily realize that any of the methods traditionally used to
store a print job on a printer spooler would be equally
applicable for use in storing a print job on a spooling server,
any of which may be used with Applicants' invention as claimed.
Further, dependent claims 19-22 and 64-67 specify details
regarding the storage of a print job on the spooling server in
accordance with a personal identification number.

Second, the Examiner indicates that the cited claim language is indefinite since "the print job does not specify its command parameters to instruct the spooling server how for processing the document or image data included in the print job." Applicant submits that the print job processing is not an inventive portion of the claimed subject matter, and that, anyone skilled in the art of printing would be aware that there are several methods available for processing the print job by the spooling server (which as discussed above is analogous to the printer spooler which is well known in the art). Further, there is a discussion of print job processing in Applicants' specification (see, e.g., page 25, lines 15-19; page 36, line 5 through page 37, line 21). Also, as discussed at page 37, lines 4-5, processing of the print job (i.e. reformatting) may not be necessary at the spooling server if the print job is already in a format suitable for an identified printer. In addition, if reformatting or processing is necessary, it may take place at the printer 120 or the printer polling device 100 (or any other suitable device) as discussed at page 37, lines 22-24 of Applicants' specification. Therefore, there are many different ways in which a print job may be processed, and the processing may take place at a variety of locations during the claimed process.

Third, the Examiner indicates that the cited claim language is indefinite since "the print job does not specify its instruction parameters to instruct the spooling server for transmitting the print job to the suitable printer or the user-desired printer in the network based on the user command." Applicants' claims are not concerned with how the spooling server is instructed to print the job by the user. There are a large variety of ways that are known or would be apparent to those skilled in the art for instructing the server to forward the job for printing on a particular printer. For example, a destination printer identification can be provided to the spooling server

with the print job, or by the printer polling device as part of
the polling query (see, e.g., page 36, lines 17-22).

Fourth, the Examiner indicates that the cited claim language
is indefinite as it is not specified "how the printer polling
device knows the print job located at the spooling server in
order to request the print job" and "how the printer polling
device knows that the print job should be retrieved to the
printer polling device without communicating with the user who
generates the print job including the print data and print
commands." Applicants respectfully submit that these statements
evidence the Examiner's misunderstanding of Applicants' claim
language. Requests for printing are registered on the spooling
server, not the printer polling device. Applicants' specification
discusses how the spooling server uses a queue for each printer
to keep track of requests for print jobs to be printed on that
printer (see, e.g., page 25, lines 4-16). This is a very common
way to implement the function of a print spooler which is known
to those skilled in the art of printing. Further, in the claimed
invention, the spooling server never initiates communication to
the printer from its end. The spooling server only responds to
polling requests. This is an important element of the claimed
invention that allows the printer polling device to be installed
transparently behind a firewall without relying on a proxy server
or special configuration of the firewall (see, e.g., Applicants'
specification, page 16, lines 5-14).

Fifth, the Examiner indicates that the cited claim language
is indefinite as "the print job does not specify the instruction
parameters included in the print job to print the data." In the
art of networked printing, the print job is understood by those
skilled in the art to be a page description language (PDL) file,
such as Postscript, PDF, or any other suitable, well known PDL.
The PDL file has all the information needed for the print job to
be processed by a printer and printed. The type of PDL or

encoding of the print job and print data is not a material part
of the claimed invention. Applicants' specification discusses
how a large variety of different types of print jobs from a
variety of different types of sources can be accepted by the
spooling server (see, e.g., page 36, line 5 through page 37, line
21).

Applicants respectfully submit that the claims as filed
particularly point out and distinctly identify the subject matter
which Applicants regard as the invention. The details referenced
by the Examiner are particular implementation details that are
disclosed in the specification and/or would be readily apparent
to those skilled in the art upon learning of the inventive
concept. Therefore, Applicants respectfully request withdrawal of
the rejections under 35 U.S.C § 112.

Discussion of Savitzky

Savitzky is directed at the rendering of a <u>web page</u> (i.e. a
Hypertext Markup Language (HTML) document) as requested from a
<u>web server</u> by a browser. Savitzky does not teach the transfer of
<u>print jobs</u> over a network as claimed by Applicants. The art of
dealing with <u>HTML web pages</u> as disclosed in Savitzky is quite
distinct from the art of <u>print spoolers</u> for receiving, storing
and forwarding print jobs as claimed by Applicants.
Many of the concepts in Savitzky cannot be directly applied
to the application of printing. For example, in the art of
networked computer printing, it is customary to show a printer
with an input arrow only, and to have the printer passively
respond to data sent to it at the initiation of the system
sending the print data (i.e. conventional "push" printer
technology). In the art of networked HTML and Web pages, the
browser (combined with the Agency) is far from passive, and
actively retrieves HTML documents and linked data interactively

under the direction of the user. The two arts do not entirely
overlap and there is a large difference in what would be obvious
to one with ordinary skill in each art. Applicant respectfully
submits that the relevant standard to be applied is that which
would be obvious to one skilled in the art of networked printing
systems, rather than the combination of the knowledge of one
skilled in the art of networked printing systems and one skilled
in the art of web page rendering.

The Examiner has acknowledged that Savitzky does not
disclose a method of <u>polling a spooling server to retrieve a</u>
<u>print job stored at the spooling server</u> as claimed by Applicants.
Applicants respectfully submit that it would not be obvious to
one <u>skilled in the art of networked printing</u> to modify Savitzky
to provide polling of the spooling server from a printer polling
device to obtain <u>a print job</u> from the spooling server, as claimed
by Applicants.

Savitzky briefly outlines an example where an Agency
requests a <u>web page</u> from a server, previews it, and prints it.
Under Savitzky, the initiation of the printing of the web page is
a function associated with the Agency, not with the server. The
user/client registers their request with the Agency, which then
polls the server to create the requested web page, which is
automatically returned to the user. In contrast, with the present
invention, the print job is sent to the spooling server and
stored there. The print job gets printed at the next polling
cycle when <u>the spooling server is polled by the printer polling</u>
<u>device</u>. This occurs without the <u>server</u> establishing a connection
with the printer polling device. In other words, in the claimed
invention, it is the printer polling device which establishes a
connection with the spooling server by polling the spooling
server, rather than *vice versa* (as acknowledged by the Examiner).
Applicant respectfully submits that it would not have been
obvious to one skilled in the art as to how the user would

initiate printing from the server side in the system disclosed in Savitzky.

Because printing is not initiated from the server to the printer, Savitzky does not teach a useful means of creating an end-to-end networked print spooling system which is the subject of the claimed invention.

Discussion of Newton in Combination with Savitzky

Newton does teach how to use polling to retrieve "messages" such as email, but does not teach to use the polling method in a printing application. Further Newton does not teach that such polling would be applicable in combination with other techniques for the application of networked printing. In fact, the words "print", and "printing" do not appear in Newton. Applicants respectfully submit that the disclosure of Newton is far removed from the field of networked printing which is the subject matter of Applicants' invention. Applicants further submit that one skilled in the art of networked printing would not look to email messaging technology such as disclosed in Newton when developing new printing technology.

The examiner has expanded the scope of the disclosure in Newton to encompass "documents." The word "document" does not even appear in the text of Newton (other than in the title of one of its references). Newton talks about e-mail-like messages in two sizes – "short" and "normal." The larger "normal" size is defined as messages "which can have up to a whole page of text" (Col. 4, lines 12-13).

Further, the subject of "document" handling is still a step away from the subject matter of the claimed invention, namely the handling of a "print jobs" in a networked printing environment. A "print job" is understood by those skilled in the art to consist of a data file intended and suitable to be processed by a

printer to produce printed output.

Newton teaches that the client be "operated by a user" and the operation is limited to "viewing messages intended for a particular user." Newton does not teach that the "messages" are machine-readable or are part of a computer or network protocol. The word "messages" in the context of Newton is exclusively used to indicate information that will be viewed and understood by a human user. It would be a large leap that is not at all the subject of Newton, to figure out how a system that utilizes human-readable messages can be adapted to transmit "messages" in the meaning of the word as used in the art of computer networks. The word "message" as used in Newton is not equivalent to a "print job" as claimed by Applicants.

Newton does make a very broad statement that "the message service described in this example could easily be modified so as to handle graphical information and any other multimedia file type" (Col. 4, lines 14-17), but does not go into details as to what those modifications would entail. The word "easily" is also debatable.

A system that can handle messages of a length of one single page of text, which may be, for example, 2,000-3,000 bytes long, would generally not be easily modifiable to typical page description language (PDL) files being comprised of 1000 times or more data (2-3 megabytes would be considered a small print job file in modern PDL's). Even the issue of handling a collection of pages (a document) instead of just one page at a time (a message in Newton) is non-trivial and is not "easily" determined in light of the disclosure of Newton.

Applicants' respectfully submit that it would not be obvious to one skilled in the art of network printing to combine the teachings of Newton pertaining to email messaging with the teachings of Savitzky regarding the rendering of HTML pages. Further, even if one skilled in the art were to combine the

teachings of Newton and Savitzky, the result would not provide a
printing system that stores print jobs on a spooling server and
forwards the print job to a printer polling device in response to
periodic polling requests, as set forth, for example, in
Applicants' claim 5. In contrast, when combining Savitzky and
Newton, the obvious result would appear to be an email messaging
system which includes HTML pages as messages.

Therefore, only with hindsight gained impermissibly from
Applicants' disclosure could one of ordinary skill in the art
arrive at the claimed invention from the combination of Savitzky
and Newton, since Savitzky and Newton do not pertain to the art
of network printing. Moreover, there is nothing in either of the
prior art references that would have motivated one skilled in the
art to combine them as suggested by the Examiner.

Discussion of Pearson in Combination with Savitzky

Pearson appears to teach omitting or replacing a different
proxy firewall in the network - the one between the open network
and the server (see "A" in diagram on the next page). Also,
Pearson is directed at performance enhancement, not ease of
configuration/deployment. This proxy/firewall A of Pearson is
already generally configured to pass the desired traffic since it
is associated with the centralized server.

In contrast, the present invention is directed at ease of
deployment on the local client network behind the proxy/firewall
(see "B" in the diagram). These proxy/firewalls B are typically
configured to only allow out-going connection initiation, not
incoming general connections. It is difficult to deploy
configuration changes in such proxy/firewalls since they are not
generally under the control of an individual client, but a
centralized, separate entity (such as an MIS). This administrator
is usually resistant to such changes on the general principle
that the more holes in the firewall, the less secure it is.

Server ← Firewall A → Open Network ← Firewall B → Client

The polling functionality of the present invention is used
to work through the firewall <u>without modifying or reconfiguring
the firewall specifically for the network traffic</u> used by the
present invention. Savitzky does not teach polling as the
examiner has pointed out.

Applicants respectfully submit that the examiner's use of
the term "printer polling device" as a paraphrased reference to
the "Agency" in Savitzky and the "Computer" in Pearson has
created some confusion. Applicants' printer polling device is not
equivalent to the Agency of Savitzky or the Computer of Pearson.

The use of proxy/firewalls and systems communicating through
them is well known. The present invention (as embodied in claims
7-11 and 52-56) is concerned with mitigating an inconvenient
feature of such systems through the use of polling. The present
invention avoids the problems of the prior art (including
Pearson) by not having to specifically reconfigure each client
proxy/firewall to enable the network traffic required by the
system of the claimed invention.

In view of the above, Applicants respectfully submit that
the present invention is not anticipated by and would not have
been obvious to one skilled in the art in view of Savitzky,
Newton, or Pearson, taken alone or in combination, or in view of
any of the other references of record.

In summary, the prior art does not disclose Applicants'
claimed system, which includes <u>polling</u> of the spooling server for
print jobs stored there. Thus, the present invention is directed
towards "pulling" the print job to the printing device using the
polling methods claimed. In contrast, the prior art network
printing systems are directed toward "push" printing technology,

where a print job is directed (or "pushed") by the print job source to a passive printing device which accepts all print jobs directed to it.
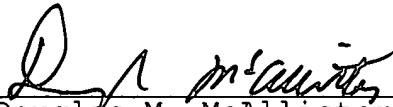
Withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the above discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Conclusion

In view of the above, the Examiner is respectfully requested to reconsider this application, allow each of the presently pending claims, and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,

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ATTORNEY DOCKET NO.: MGI-177
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